

Large scale numerical simulation of seismic wave propagation by using a parallel pseudospectral method

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The pseudospectral method (PSM) is an alternative attractive higher-order finite-difference scheme which is used for wave propagation simulation in heterogeneous media. In order to apply the method for large scale 3-D simulation of wave propagation, we developed two style of parallel PSM code. These scheme are based on partition of computational domain and on decomposition of 3-component wavefield, respectively. We conducted performance tests using different style of parallel machine such as purpose-made parallel computer and a cluster of three workstations connected by computer network and compared with theoretical experiments, in order to show the efficiency of the parallel algorithms.